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March 1999

## Center for Sustainable Agricultural Systems Newsletter, March/ April 1999

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# Center for Sustainable Agricultural Systems

March-April, 1999 Newsletter

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## We Came! We Saw! We Heard!

In response to concerns within the College of Agriculture and on the part of agricultural and natural resources stakeholders, the Nebraska Legislature passed LB 149 in 1973, establishing the University of Nebraska Institute of Agriculture and Natural Resources (IANR). The Institute officially began April 1, 1974, and over the past year stakeholders, students, faculty, staff, and administrators have been celebrating IANR's 25<sup>th</sup> Anniversary. One of the celebration events was a series of 24 "Listening Sessions" held on the campus and at various locations throughout the state. The intent was to get participants' views in regard to the events and issues that impact the quality of life of Nebraskans now and into the future. The information received from more than 600 participants provides input for determining IANR's program priorities, operations improvement, and strategic and action planning. In addition, the sessions provided a discussion forum with IANR administrators. The following are general themes participants offered and a sampling of comments and questions pertaining to sustainable systems.

In general, participants supported IANR's programs in agriculture, agribusiness, natural resources and human resources. Considerable support was expressed for several areas including research, extension, leadership education and student programs. The participants look to IANR for vision, leadership, and as a source of unbiased information. We heard!

*Nebraska Economy.* Questions were raised in regard to the sustainability of the livestock economy, which represents about 65% of the value of the state's cash receipts from agriculture. Issues included the trends in concentration, vertical integration, environmental impacts, and the uncertain global demand. Stable, profitable income potential in agriculture is a primary concern.

*Water Quality and Quantity.* Water continues to be important as participants discussed protecting the environment. The environmental concerns appeared to be more mainstream as compared to being the concern of a few participants. Scenarios regarding water distribution among irrigation, stream flows, community and industrial uses received considerable attention.

*People and Communities.* Nebraska's population is aging, and there are shifts to urban and trade center locations. Rural community viability is a concern. Quality jobs and getting young people started in farming are issues. Compared to similar discussions held in 1994, there was a notable increase in family, children, youth, multiple jobs, nutrition, and related people concerns.

*Education.* The participants strongly support increased extended education programs and strengthened student recruiting in all areas of the state. "The University should encourage all students - not just the very top academic performers." Stronger University linkages with K-12 schools and community and state colleges were suggested.

*Research.* Participants expressed a need for continued basic and applied research. We heard several times that unbiased information is vital in evaluating commercial products, and it helps to reduce the uncertainties that result from information voids.

*Lack of Control.* Participants expressed concern with the increasing number of uncertainties and complexities such as global markets, regulations, changing rural landscapes, and outside capital buying into farming and ranching. As one farmer said, "I look back to the time when my biggest concerns were hoping that it would rain and insect problems." The participants expressed an interest in some form of state spending lid.

We heard about the need for more working sustainable models. The following are some participant comments and questions.

- Partnerships with the Natural Resource Districts, state and federal water, wildlife and conservation agencies are important. Do more!
- Water quality research and education is vital. We need more research on environmentally friendly pesticides and fertilizers.
- There is an increased interest in organic production and certification. Will IANR increase its efforts in this area?
- The sustainability of many of our rural communities is a most critical issue. We need information, leadership, and quality jobs.
- The move to mega hog enterprises raises serious environmental, ecological, social and economic sustainability issues.
- Cropping systems need to be assessed on environmental impacts - not just yields; sustainable production is a major issue.
- Sustainability and the related environmental issues will be major challenges over the next ten years.
- There is the need to do research and consider alternative sources of energy including the wind and lightning.
- Niche markets and different marketing initiatives offer increased opportunities for organic farmers and gardeners.
- We need more systems analyses in IANR and an understanding of the integration of the social, physical and biological sciences.
- An immediate issue is the sustainability of farm and ranch families.
- How do we get young farmers started and keep them in farming?

- Sustainability and environmental compatibility need to be integral in most all IANR teaching, research, and extension programs.

I was a discussion leader at all of the "Listening Sessions." It was a pleasure to meet with the participants who had a wide range of interests and experiences. Many expressed appreciation that University representatives made the effort to meet with them and listen to their concerns and questions. In my view, the "Listening Sessions" have been the high point in IANR's Silver Anniversary celebration.

*Submitted by Glen Vollmar*

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## **University Role in Biotechnology: Who Benefits from New Technologies?**

*Second in a Series.* There is growing debate about the emerging role of universities in research and applications of biotechnology. Current interest and investment in production and use of genetically modified organisms (GMOs) have sparked a revolution in university research laboratories and fields. Perhaps no single set of new techniques and potential technologies has caused such a substantial short-term shift in focus of people and resources in universities. We hope that encouraging debate within the university community and among our clients will help inform people of the issues and aid in charting a rational strategy for the future.

### **Focus on Technology**

There has been a near-singular focus by agricultural researchers on increasing production and the returns to land, labor, and other inputs in the production process. In the last article we raised two questions, one on the current limitations to farm income and community viability, and the other on who benefits from technologies. If low productivity is indeed a constraint and we can improve farm income by removing some of the biological or technical reasons that keep yields low, it follows that we can contribute to improving the situation by more production research. Most of us in agricultural research are trained to do just that. However, there is the danger that we will continue to do what we know how to do, will continue to be rewarded by our peers and by funding sources to do what we do well, and will completely miss the mark on what is needed to solve the real problems of income of farm families and stability of farming communities.

It is most comfortable to follow the well-worn path. The route is well marked, and the destination seems clear. We are treading more rapidly, perhaps publishing more

successfully, because we have more tools and support than many who went before us. Yet we need to be sure where that path leads. Production research had obvious benefits to farmers, communities, and the general public for much of this century. Now we should see whether things have changed.

## **Impacts of New Technologies**

Studying the social impacts of new technologies is not a new area of analysis for social scientists. Since hybrid corn was introduced in Iowa, social scientists have been evaluating the social implications of the adoption of specific technologies. These analyses were often conducted after the fact, following the introduction and adoption of specific technologies. Yet, these studies also provide the scientific methodology for more creative ways to examine the social impacts of new technologies before they are introduced. This can help guide our decisions about what types of research are most important for the university.

Social Impact Analysis provides the tools to examine several aspects of impacts of new technologies such as GMOs. The questions generally addressed include: How does this new technology influence the population base? Does the technology force an out-migration, an in-migration, or a change in population structure? How does the new technology influence the equity with which the benefits of the new technology accrue? Do the elite gain additional control over resources, or are resources distributed across the complete social system? What is the impact of the new technology on community structure? Will local institutions be impacted - changing the decision-making process? This is often tied to an externally directed change in the power structure. How does the new technology impact the culture of a community, region or nation? Culture provides those guidelines as to what is acceptable behavior and what is not. Does the adoption of GMOs change the norms of a community? Norms within many rural communities still see one of agricultural producers' roles as stewardship of the land. Does the adoption of GMOs change these norms? In rural areas, does the adoption of GMOs alter the blueprint of what is right or wrong in how we farm? Does the adoption of these new technologies change the attitudes of farmers in how they deal with each other or with customers of their products? The values associated with food production influence behavior among agricultural producers and residents in adjacent communities, as well as their relationship with and the attitudes of the general public.

As a social scientist examines the social impact of new technologies, other questions need to be included in the analysis. These include the impact on family relations. While this may seem trivial, the family is the primary socialization agent and changes in technologies may influence the process of socialization of children. What does this mean for the future? What does it mean for the encouragement and support of the next generation of farmers, and who will control the land?

## Issues of Equity

The questions of equity are imbedded in many of the aspects of social impact assessment. Long-term sustainability is linked to social justice. Given that food and fiber production is both a private and public function, and that the natural resource base is a public good, then it is important for scientists to examine the public side as well as the private side of the adoption of new technologies. With a social impact assessment methodology, it is possible to examine the secondary impacts of the adoption of new technologies such as GMOs.

Ethical questions abound as we think about who benefits from research and who loses. As a land-grant university, is the goal to create a research base strictly for individual gain, or are there societal and global needs that may be greater, and are these really served by the current model? If this is the case, research aimed at evaluating the social, environmental, and economic impacts of new technologies must be undertaken. We no longer live in a world of continued expansion - the world of many agricultural producers of the early 1900s. We have experimented with intensive farm production to make up for the damage caused by an agricultural system based on exploitation and expansion of acreages. The moral issues are becoming clearer as we continue to explore in which directions our research will go.

The issues of social impact are at the core of many of the decisions made by researchers. Our current system is built on the assumption that what is good for one is good for all. We need to carefully examine this assumption in light of concentration of land and resources, both in the farming sector and in industry. We already have a great deal of literature showing that concentration, centralization and depopulation have negative impacts on rural people and the environment. We also have studies that indicate patterns of change in rural attitudes as producers view themselves as "managers" versus "farmers." The implications for communities, rural residents, food safety, and environmental integrity should be central to our decision making in the university. The question of who benefits is one that can be researched, and it should have high priority for our institution.

Next newsletter: Who owns genes and diversity?

*Submitted by John Allen, Charles Francis*

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## Highlights of Upcoming Book: *Under the Blade*

This is the sixth and final article in a series that has been highlighting information in a book titled *Under the Blade: The Conversion of Agricultural Landscapes*. Information in this article is from a chapter by the book's co-editors Richard Olson (University of Nebraska-Lincoln) and Tom Lyson (Cornell University) and by Allen Olson (University of Arkansas). Additional authors who contributed chapters in the book are from universities around the country. For more information, contact Richard Olson at the CSAS office, or e-mail him at [csas005@unlvm.unl.edu](mailto:csas005@unlvm.unl.edu). To order the book, see the Resources section of this newsletter.

### Policy Recommendations for Preserving Agricultural Landscapes

Few people would define their vision of the preferred future of the United States as sprawling development, degraded landscapes, gridlocked roads, decaying inner cities, and an increasing reliance on other countries for energy and even food. Yet that is what we are moving toward, a function of what some have referred to as the tyranny of small decisions. A five-acre homesite here, a small subdivision there, and elsewhere the paving of a gravel road - each action is of little significance by itself, but the cumulative effect is very significant.

Overall, we seem to be using our wealth and power in a mindless frenzy of consumerism, wanting more and bigger of everything, including roads, houses, building lots, and a place in the country with two (or more) SUVs parked in the drive. An editor of the *Charlotte Observer* referred to the "orgiastic devouring of countryside" occurring around his city, a description that applies to the urban-rural fringe of most U.S. cities.

Many local governments, land trusts, and other citizen groups are attempting to preserve agricultural lands. However, a general theme emerging from 21 case studies of towns, counties, and states throughout the U.S. is that most regions face tremendous threats to farmland and rural landscapes, and current preservation efforts are often inadequate. Quotes from the case studies illustrate the problems and negative trends:

*Barriers to maintaining the SE Pennsylvania food and farm system currently outweigh the opportunities. Changes in policies, programs, attitudes, and behavior are required for agriculture to survive.*

*Significant negative changes have occurred in western Washington's agricultural resource base, despite the many farmland protection strategies in place in the 14 counties.... Western Washington's farmland protection programs have been ineffective.*

*Planning, zoning, and special tax laws have failed to protect prime agricultural land in Waukesha County [Wisconsin]. In late 1996, virtually the entire County is zoned for development, and it appears as if the majority of agricultural lands remaining will soon be lost forever.*

*The future of, and the ability for, agricultural production in Lake County [Florida] have been forever changed. The necessary infrastructure for agricultural production is disappearing...*

Even Oregon, whose land use and farmland protection program is among the strongest in the country, has fallen short of its goals during the past 20 years as graded by the citizen group 1000 Friends of Oregon. The group's conclusion is that Oregon's "land use laws are not strong enough or working well enough to protect our quality of life."

Local efforts to preserve agricultural landscapes face many barriers. A state or federal decision on the placement of a new highway can completely override a town's desire as to where growth should occur. Development in one community can spill into neighboring towns. The addition of 2.6 million people in the U.S. each year is creating overwhelming pressures. Collapsing global commodity prices make agricultural uses of land even less competitive against non-agricultural uses. Local planning boards are often strongly influenced by developers who have a huge financial interest in subverting farmland protection efforts, and zoning and other laws are often perceived as impermanent and vulnerable to legal challenges.

In 1973, Congress debated the Land Use Policy and Planning Assistance Act, which would have required the states to develop comprehensive statewide land use plans. The bill passed the Senate but was narrowly defeated in the House of Representatives. In today's political climate, such a national mandate is impossible, but there is much that the federal government could do to increase the chances of success for local farmland preservation efforts. Some examples are:

- Adopt a national policy of stabilizing U.S. population.
- Strengthen the Federal Farmland Protection Policy Act to require that federally-funded infrastructure projects be designed to minimize both direct and indirect losses of farmland.
- Through legislation and court actions, promote a restrictive definition of a regulatory taking so that zoning for exclusive farmland use is not considered a takings.
- Revise estate tax laws to exclude from a decedent's taxable estate 100% of the value of farmland encumbered with a permanent conservation easement.
- Conduct a thorough review of the direct and indirect effects of federal laws and policies on farmland loss, and require a similar analysis of state laws.



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## **Study Finds Consolidation Harms Nation's Consumers and Farmers**

A small number of dominant "clusters" of firms control the decision-making throughout all levels of the U.S. food chain, threatening America's system of independent family farms and ranches, according to a new report, prepared by Dr. William Heffernan, a rural sociologist at the University of Missouri, and unveiled February 10 by the National Farmers Union.

The study details the relationships forming the three major clusters - Cargill/Monsanto, ConAgra, and Novartis/ADM - which now dominate the food system. Some of the study's findings are:

- The complexity of the linkages in the system undermines market competition and makes it difficult to measure. The network of relationships is creating a seamless system with little market transparency along the various stages of the food system. Because of the complexity, a firm that does not hold a majority share of a specific market may still have great decision-making power within the food chain.
- Technological advances are accelerating the process of vertical integration. Biotechnology and the terminator gene have put the farmer at the mercy of the food cluster for seed to plant the crop. Also, precision farming's global positioning system separates management from the production of agriculture. With this technology, it is possible for "managers" in distant offices to make decisions about farm production, while producers simply become laborers.
- The new structure threatens independent producers. The clusters influence opportunities all along the food chain - from production inputs to global trade - which severely hampers producers' ability to earn a fair return on their product. It also erodes the independence of producers by shifting □□□□ major decision-making to a handful of firms.
- The new structure is harming rural communities because corporate returns are reinvested in the firm, rather than in local economies where the goods are produced.

Details of the study are online at

<http://www.nfu.org/Newsroom/NewsRelease/newsRelease.cfm?NRID=16#Study>.

## **National Ag Biotech Meeting in Lincoln**

The National Agricultural Biotechnology Council (NABC), in collaboration with the University of Nebraska-Lincoln and the Wallace Institute for Alternative Agriculture, is sponsoring a symposium entitled *World Food Security and Sustainability: The Impacts of Biotechnology and Industrial Consolidation*, to be held in Lincoln, Nebraska, June 6-8, 1999. Readers of this newsletter will recognize the names of many of the presenters, including Fred Kirschenmann, Cornelia Flora, Dennis Avery, Chuck Hassebrook, and William Heffernan. NABC provides an open forum for exploring issues in agricultural biotechnology. All plenary sessions are free and open to the public. All workshop sessions require registration and a fee. Early registration (on or before April 15) is \$175; after that it is \$200. Proceedings will be available free of charge in Spring 2000. For more information, contact the Center for Biotechnology, 402-472-2635, or see <http://www.cals.cornell.edu/extension/nabc/webmeeting.html>.

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## **Nordic Agroecology Course Welcomes Students**

An intensive one-semester course in Agroecology will be introduced starting in August 1999 at NLH, Norway. See <http://www.agsci.kvl.dk/coem/NOVA/MSA.html>.

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## **Agroecology Field Course Offered**

The North Central Institute for Sustainable Systems will offer the second annual for-credit field course, Agroecosystems Analysis, August 13-20, 1999 in the northwest Iowa area. Contact the CSAS office for details, or see <http://www.ag.iastate.edu/departments/agronomy/nciss/>.

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## Resources

*Under the Blade: The Conversion of Agricultural Landscapes.* 1999. \$25. Examines the patterns, causes and consequences of current land use decisions in the U.S. Looks at farmland loss from several perspectives, and then integrates the results into policy recommendations (see related article in this newsletter). Westview Press, 5500 Central Ave., Boulder, CO 80301-2877, 303-444-3541. To order a \$5 course examination copy, call 1-800-386-5656.

*Natural Beef: Consumer Acceptability, Market Development and Economics.* Free. Presents sample marketing plan and four case studies for farmers and ranchers interested in grass-fed beef production and marketing. Linda Fugitt, UC SAREP, One Shields Ave., U. of California, Davis, CA 95616, 530-752-7552.

*Field Grown Cut Flowers: A Practical Guide and Sourcebook.* \$39.95 + \$5 s&h. Wisconsin grower John Hurd worked with Kansas State U. floriculture specialist Alan Stevens to produce a 400-page book detailing production and marketing of flowers and ornamentals. Call 800-884-4730.

*Clues to Rural Community Survival.* 1999. \$15. Profiles 18 successful communities ranging in size from 300 to 35,000, mostly in the Midwest and Great Plains, and includes new information about the Heartland Center for Leadership Development's widely acclaimed characteristics of thriving small towns. Call the Center to order: 800-927-1115 or 402-474-7667.

*Organizing Your Community Against Large-Scale Animal Feedlot Pollution, and A Citizen's Guide to The Environmental Review Process for Large-Scale Livestock Operations.* \$7 ea. MN Clean Water Action, 326 Hennepin Ave. E., Minneapolis, MN 55414, 612-623-3666.

*Getting Food on the Table: An Action Guide to Local Food Policy.* 1999. \$12. Provides overview of U.S. city and county policies and programs that affect community food security. Profiles nine organizations, offers basic organizing information, identifies potential project funders, and recommends resources. Community Food Security Coalition, PO Box 209, Venice, CA 90294, 310-822-5410, <http://www.foodsecurity.org>.

*Holding Our Ground: Protecting America's Farms and Farmland.* 1997. \$34.95. Discusses reasons for protecting farmland and methods to advocate for farmland preservation. Analyzes federal, state, and local protection efforts and techniques. Explores land protection options such as purchasing development rights and private land trusts. Island Press, Box 7, Dept. 2AU, Covelo, CA 95428, 800-828-1302, [info@islandpress.org](mailto:info@islandpress.org), <http://www.islandpress.com/islandpress/index.html>.

*Final Results of the Third Biennial National Organic Farmer's Survey.* 1999. Compiles survey findings from 4,638 organic farmers. Prioritizes their perceived needs for organic farming research, ranks usefulness of production resources, ranks products grown as well

as marketing outlets. Gives an overview of organic management strategies utilized and examines constraints and challenges to organic production. Executive Summary available online. Organic Farming Research Foundation, PO Box 440, Santa Cruz, CA 95061, 831-426-6606, email [research@ofrf.org](mailto:research@ofrf.org), <http://www.ofrf.org/>.

*Making the Transition to Organic Farming*, Conference Proceedings, University of Guelph, January 29-31, 1999. \$10. Workshops include weed management, soil fertility, getting your farm certified, permaculture, community supported agriculture and more. Tomas Nimmo, Conference Coordinator, Box 116, Collingwood, Ontario, Canada, L9Y 3Z4, 705-444-0923, email [organix@georgian.net](mailto:organix@georgian.net); <http://www.gks.com/OrgConf/>.

*1999 National Organic Directory*. \$47.95 + \$3 s&h. Community Alliance with Family Farmers, PO Box 363, Davis, CA 95617, 1-800-852-3832.

*Food Bytes*. E-mail newsletter that provides news and analysis on genetic engineering, factory farming and organics. Looks at the influence of powerful agribusiness trade associations as in the case of the EPA's brochure on food safety and pesticides. To subscribe, send an email to [majordomo@mr.net](mailto:majordomo@mr.net) with the message: subscribe pure-food-action. For more information, contact Campaign for Food Safety/Organic Consumers Association, 860 Hwy 61, Little Marais, MN 55614, 218-226-4164, [alliance@mr.net](mailto:alliance@mr.net), <http://www.purefood.org>.

The Institute for Agriculture and Trade Policy has initiated a listserv on agriculture and climate change. To subscribe, send an e-mail to [listserv@iatp.org](mailto:listserv@iatp.org) with the message: subscribe ag\_climate. Direct questions or comments to Mark Muller at IATP, 612-870-3420, [mmuller@iatp.org](mailto:mmuller@iatp.org).

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## Coming Events

Contact CSAS office for more information.

### 1999

June-Sep. - Nebraska Sustainable Agriculture Society tours throughout NE

June 6-8 - National Agricultural Biotechnology Council Meeting - World Food Security and Sustainability: The Impacts of Biotechnology and Industrial Consolidation, Lincoln, NE

<http://www.cals.cornell.edu/extension/nabc/webmeeting.html>

June 12-16 - 6th Conference on Agroforestry in North America: Sustainable Land-Use Management for the 21st Century, Hot Springs, AR, [tclason@agctr.lsu.edu](mailto:tclason@agctr.lsu.edu)

[http://www.missouri.edu/~afta/Sixth\\_Conf.html](http://www.missouri.edu/~afta/Sixth_Conf.html)

June 14-16 - XXVIII International Congress Work Sciences in Sustainable Agriculture, Horsens, Denmark, <http://www.sp.dk/~cgs/ciosta/>

Aug. 8-11 - Soil and Water Conservation Society Annual Conference, Biloxi, MS

Aug. 9-10 - Amaranth Institute 1999 Meeting, Omaha, NE

Aug. 9-13 - Nebraska Forestry Shortcourse, Chadron, NE

Aug. 9/14/17 - Organic Grain Farming Workshops, Randolph/Aurora/Clarkson, NE

Aug. 24 - Alternative Ag Expo: Diverse Systems that Work, South Sioux City, NE

Oct. 12-15 - Second National Small Farm Conference: Building Partnerships for the 21st Century, St. Louis, MO

Oct. 20-23 - North American Chapter Association for Farming Systems Research and Extension (AFSR/E) Biennial Meeting - Sustaining Agriculture in the 21st Century: Thinking "Outside the Box," Guelph, Ontario, CA, (abstracts due Apr. 1), <http://www.oac.uoguelph.ca/FSR/>

For additional events, see:

[http://www.sare.org/wreg/view\\_notice\\_adm.pl](http://www.sare.org/wreg/view_notice_adm.pl)

<http://www.agnic.org/mtg/>

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## Did You Know?

Nebraska highlights from National 1997 Census of Agriculture: 51,454 farms in Nebraska, down 2.8% from 1992; average size 885 acres, up from 839 in 1992; all Nebraska farms with annual sales of less than \$50,000 had combined annual marketings of \$403 million, or 4.1% of the state's total sales, yet they accounted for 49% of all Nebraska farms. At the other end, 4.9% of Nebraska farms had annual sales of at least \$500,000, accounting for more than 55% of Nebraska's agricultural marketings. For more, see <http://www.nass.usda.gov/census/census97/highlights/ne/ne.htm>.

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# **Celebrate Earth Day April 22!**

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